

UNIVERSITY OF QUEENSLAND

Prentice Computer Centre

NEWSLETTER

authorization: Director of the Centre

1 CHRISTMAS/NEW YEAR ARRANGEMENTS

No work will be processed for users on Wednesday 24 December to allow the Centre to complete end of year procedures. Users may collect work processed the previous evening up until 1 p.m. on Wednesday.

The Centre will close on the 25th and 26th December and on the 1st January. A single shift operation between 9 a.m. and 5 p.m. will be provided on 29th, 30th and 31st December.

2 FUTURE DEVELOPMENTS

The thrust of the development of the Computer Centre will be along four major fronts:-

- (i) The distribution of computing intelligence outward to users. Emphasis will be on hardware and software support for mini-computers and microprocessors.
- (ii) Connection of our local network to other major host computers to extend the range of higher level facilities available to users and encourage resource sharing.
- (iii) The upgrade of central computing equipment to meet the normal growth and service requirements of teaching, research and administrative needs of the University of Queensland and Griffith University.
- (iv) The continued support of relevant and standard program packages for teaching and research work of the Universities.

Consistent with these objectives, we plan to have remote batch stations, based on mini-computers, operational by First Semester 1976 at the Medical School, the Commerce Building for the social science precinct and at Griffith University. Further development will be aimed at enhancing on site facilities available from mini-computers.

The Policy Committee has given approval for a trial link of our network to the CSIRO network. Assuming that communications approval is given by the Australian Telecommunications Commission, our plans are to have this link operational by 1.7.76. The aim of both organizations is to provide resource sharing rather than load shedding. The major emphasis will be to establish a remote batch service to the CSIRO for users wishing to take advantage of 60 bit word length for higher precision and special software available from the CSIRO.

As regards enhancement of the central computing facility, we hope that sufficient capital funding will be made available from the limited funds available to the University of Queensland and Griffith University to enable the purchase of additional core memory, high speed swapping disks and communications equipment. For a modest investment in funds, it will then be possible to operate the equipment as two identical single processor configurations rather than a dual processor installation. This will relieve very significantly the current pressure points by doubling our job slot capacity and swapping and as well provide useful increase in processing capacity. We hope that we can then meet demands until end 1977 when a major upgrade of equipment will be essential.

It will be appreciated that with the major increase in load we have experienced in 1974 (45% increase) and 1975 (60% increase), many of our software support systems are tottering under the strain. Our first priority in 1976 must be to upgrade and repair our support software. As well, there are a number of additional facilities which require supporting software to be developed before they can be brought into operation (viz: an optical page reader, a digitiser and a dynamic graphics terminal). We would like to see a greater emphasis on software for teaching functions but the effort we can put into this will depend on the resources we have available.

### 3 CHARGES TO INCREASE

For some years we have been able to meet the significant increases in costs of staff and consumable items by revenue from increased demand (i.e. users have benefited from economies of scale). Indeed in 1974 it was possible to introduce significant discounts for low priority work which had advantage to users by way of lower charges and advantage to the Centre by encouraging work away from heavily loaded prime shift.

Unfortunately, the stage has been reached where some increase in our base rate charges is justified but, at the same time, low priority discounts will be extended. Full details of the new charging schedule which operates as from 1.1.76 will be published shortly.

Some base charge rates will be increased amounting on average to approximately a 9% increase. However, this will be offset to some extent by providing 30% rather than 20% discount for terminal work after 6 p.m., commencing the discount of 50% for terminal work at 7.30 p.m. rather than 9 p.m. and increasing the discount of 20% for batch work commencing after 6 p.m. to 30%. The existing half rate for overnight turnaround and quarter rate for weekly turnaround will continue to apply.

The charging factor for external users will be increased from 2 to 2.1 times the base rates. This will result in an average increase of around 15%, offset to some degree by the extension of low priority rates to external users.

The University has as a matter of public service provided computing to other educational institutions at internal rates. It will be appreciated that demands from this area have increased beyond some slight marginal use. In view of areas of common interest and the possibilities of significant future collaboration, the University did not feel it was appropriate to charge full external rates, although some increase over internal rates was considered necessary. It was decided that a charge factor of 1.2 times the internal base rates would apply to other educational institutions.

#### 4 AT LAST - THE 9-TRACK MAGNETIC TAPE TRANSPORTS

Two Ampex model TMA 9-track Tape Transports will be available for general use from Monday, 24 November 1975.

These transports are capable of operating at 800BPI NRZI (non-return to zero invert) or 1600 BPI PE (phase encode). Initially only the 800 BPI NRZI format will be available. In this respect, the units conform to DEC specifications for 9-track operation and the standard DEC manuals should be consulted for details on how to use these units. In general, tapes can be read or written in core dump mode which consists of 5 tape characters of 4½ 8-bit bytes corresponding to one 36-bit word, or industry compatible mode consisting of 4 tape characters of 4 8-bit bytes corresponding to 32-bits of one 36-bit word. Standard DEC software assumes core dump mode. Special MACRO routines have to be written to utilize the industry compatible mode. In both modes, a cyclic redundancy check (CRC) character is generated and written, but it is not checked on reading.

The standard assignment for the 9-track tapes is MTA2 and MTA3. Tape speeds is 125 ips giving a transfer rate of 100 kbs. The transports feature full automatic loading from open reel or cartridge, high speed rewind (one minute for 2400 ft. reel) and single capstan which only contacts the non-oxide side of the tape.

Present operational software does not allow easy specification of unit type and the following procedures should be used for the time being -

1. The unit is assigned to the user with the MOUNT command -  
e.g. .MOUNT MTA:T /REEL:1035/VID:9TRK/RO

Note - defaults are 7trk if not specified and  
Write Enabled if not otherwise specified.

2. Set the density to 800 bpi -  
e.g. .SET DENSITY T 800

These procedures will be improved as new operational software becomes available.

## 5 SOME STAFFING CHANGES

Hardware Engineering. It is with a great deal of regret that we announce that Jim Sokoll, the Centre's Senior Engineer for many years, has submitted his resignation (effective 27.2.76). Jim has been associated with the Centre for 14 years. His special skills in maintenance of computing equipment, interface design and communications has been of tremendous benefit to the Centre and its users. Jim intends to enter business on his own account and we all wish him every success.

As a result of the resignation of Mr. E.J. Sokoll, the Centre's Engineering Group will be split into two Sections, each responsible to the Director. Equipment Maintenance and Construction will be under the control of Graham Jerrard. Graham has sound technical qualifications and has been with the Centre for 13 years. Hardware and Communications Development will be under the control of Graham Rees. Graham Rees is an Engineering Graduate from this University (1966) and has 10 years experience in computing and communications. He joined the Centre in 1973 and has been involved significantly in forward developments in communications and the mini-computer area.

Operations. As a result of a combination of significant increase in work and lack of staff resources, the maintenance of our system software requires some special effort. Chris de Voil, our current Operations Manager, has particular expertise in this area and it has been decided to release him from the position of Operations Manager for six months, commencing January, to enable him to devote his full attention to some areas of software maintenance.

Geoffrey Prudames will take his place as Operations Manager. Geoff (B.Sc.(Hons) Liverpool University) has 8 years computing experience covering a variety of areas. He has been with the Centre for the past year as Senior Programmer of our User Services Group and as a result has some appreciation of the problems which are faced by our users.

## 6 CARD PUNCHING

As users are no doubt aware, the GE-225 will shortly be taken out of service and with it our only computer driven card punch. We will then not be able to punch cards within the installation and the PDPUN procedure used for some time now will no longer apply. In its place, the CPUNCH command discussed below will be used to create spooled card punch requests which will be transferred to magnetic tape and transferred to cards at another installation.

The following differences should be noted -

- The Fortran option of PDPUN no longer applies. That is, tab characters in the file will skip to columns 9, 17, 25 etc. and the Fortran convention for the first tab will not be observed. It will not be possible to incorporate sequence numbers into a file.
- The punching mode of the file must be stated explicitly and only /PUNCH:026 or /PUNCH:ASCII should be used. This is necessary because many system programs transfer files in binary mode and unless the mode of the file is explicitly given, the mode of the file is used.

This procedure is being tested experimentally at the moment and it is likely that it will be implemented fully some time in December. A project to create a procedure for the Fortran tab interpretation will be established to provide the additional features of the PDPUN scheme.

### Function

The CPUNCH command is used to place entries into the card punch output queue. This command is equivalent to the following form of the QUEUE command:

QUEUE CDP:job name=list of input specifications

## Command Format

CPUNCH jobname=list of input specifications

jobname = name of the job being entered into the queue.  
The default is the name of the first file in the request,  
not the name of the first file given. These differ when  
the first file given does not yet exist.

input specifications = a single file specification or a  
string of file specifications, separated by commas, for  
the disk files being processed. A file specification  
is in the form dev:file.ext[proj,prog].

dev: = any file structure to which CDPSPPL will have access;  
the default is DSK:.

file.ext = names of the files. The filename is optional.  
The default for the first filename is \*, the default for  
subsequent files is the last filename used. The extension  
can be omitted; the default is .CDP.

[proj,prog] = a directory to which the user has access;  
the user's directory is assumed if none is specified.

Note that if all arguments to the command are omitted (i.e. only  
the command name is given), the listing of all entries in the card  
punch queue for all jobs of all users is output.

The wildcard construction can be used for the input specifications.  
Switches that aid in constructing the queue entry can also appear as  
part of the input specifications. These switches are divided into  
three categories:

1. Queue-operation - Only one of these switches can be placed  
in the command string because they define the type of queue  
request. The switch used can appear anywhere in the  
command string.
2. General - Each switch in this category can appear only once  
in the command string because they affect the entire request.  
The switch used can appear anywhere in the command string.
3. File control - Any number of these switches can appear in  
the command string because they are specific to individual  
files within the request. The switch used must be adjacent  
to the file to which it applies. If the switch precedes  
the filename, it becomes the default for subsequent files.

The following switches can be used with the CPUNCH command.

<u>Switch</u>	<u>Explanation</u>	<u>Category</u>
/COPIES:n	Repeat the output the specified number of times. N must be less than 64. If more than 63 copies are needed, two separate requests must be made. If this switch is not specified, the default is 1.	File Control
/DISPOSE:DELETE	Delete the file after spooling.	File Control
/DISPOSE:PRESERVE	Save the file after spooling. This is the default for all files except files with extensions .LST, .TMP, or .CDP (if protection of .CDP is 0xx).	File Control
/DISPOSE:RENAME	Rename the file from the specified directory immediately, remove it from the logged-out quota, and delete it after spooling. This is the default for files with extensions of .LST, .TMP, and, if the protection is 0xx, .CDP.	File Control
/KILL	Remove the specified entry from the card punch queue. This switch can be used for deleting a previously submitted request as long as the request has not been started by the Spoolers.	Queue Operation
/LIMIT:n	Limit the output to the specified number of cards.	General
/PRIORITY:n	Assign the specified external priority (n=0 to 62) to the request. The larger the number, the greater priority the job has. The default is 10 if no switch is given and 20 if the switch is specified without a value.	General
/PUNCH:026	Punch the files in 026 Hollerith code. If a /PUNCH: switch is not given the files are punched according to the data mode specified in the file.	File Control

Command Format (contd)

<u>Switch</u>	<u>Explanation</u>	<u>Category</u>
/PUNCH:ASCII	Punch the files in ASCII card code. If a /PUNCH: switch is not given, the files are punched according to the data mode specified in the file.	File Control

Characteristics

The CPUNCH command:

Leaves the terminal in monitor mode.  
Runs the QUEUE program, thereby destroying the user's core  
image.  
Depends on FTQCOM which is normally absent in the  
DECsystem-1040.

Examples

.CPUNCH SYSTAT.MAC/PUNCH:ASCII <cr>	Punch the file SYSTAT.MAC in ASCII format.
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